FISH AND WILDLIFE BRANCH PROJECT SUMMARIES

2015-16

Yukon
Environment

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BIODIVERSITY

Yukon
Environment

Amphibian Management Review

Bruce Bennett, Conservation Data Centre Coordinator

Project Description: What we are going to do

The Management Plan for Yukon Amphibians recommends the development of best management practices for the assessment of projects that may affect amphibians and for researchers working with amphibians.

To address this recommendation, we will develop best management practices for Yukon amphibians. These best practices will be used to inform environmental assessments and improve the design of future amphibian research projects.

Management Implications: Why we are doing it

A clear understanding of best management practises for Western Toad—a Federal species at risk—and other amphibian species will facilitate their conservation. These best practices will be used to mitigate the effects of development on amphibian habitat.

Project Activities: How we will get it done

We will gather information on amphibian management practices in other jurisdictions and revise them to reflect northern environments.

Biodiversity Science and Management

Thomas Jung, Senior Wildlife Bioligist

Project Description: What we are going to do

We will conduct monitoring programs using transmitters, aerial surveys and field-based observations for the following projects:

- Kluane Snowshoe Hare Survival
- Southern Lakes Gyrfalcon Inventory
- Southern Yukon Ground Squirrel Population Assessment

Management Implications: Why we are doing it

Through these projects we will monitor species important to Yukon biodiversity, and provide information on the impacts of climate change and human activities on these species. This information will help inform future planning and decision-making.

The Kluane Snowshoe Hare Survival study will help us determine how climate change and different snow conditions are affecting the survival of snowshoe hare, an important food source for boreal predators.

Southern Lakes Gyrfalcon Inventory will allow us to monitor the gyrfalcon population in the region and help inform British Columbia's harvest management and permit allocations for this species adjacent to Yukon.

Ground squirrel population data will help us clarify the population stability of this important food source for predators.

Project Activities: How we will get it done

Snowshoe hare survival: We will capture and radio-collar up to 30 snowshoe hare in April near Kluane Lake. We will monitor their survival by radio-telemetry and explore how this relates to coat colour and snow conditions. This is the fourth year of a 5-year cooperative study being completed with partners from the University of British Columbia and the University of Toronto. The bulk of the work is being carried out by our university partners.

Gyrfalcon inventory: This is a cooperative monitoring project with Yukon Parks Branch and Yukon College. Yukon College has provided in-kind support for previous inventories. In June, we will conduct a 1-day aerial survey of known gyrfalcon nesting territories in the Coast Mountains—including portions of

Kusawa Territorial Park. We will monitor which territories are occupied by nesting pairs, and the number of chicks in nests (their reproductive success).

Ground Squirrel population assessment: We will work with the University of British Columbia to use non-invasive techniques to determine colony sizes between Kluane Lake and Whitehorse. We will then use these data to develop models that examine factors affecting colony occupancy in Yukon. This is the third year of a 4-year cooperative study with the University of British Columbia.

Keystone Boreal Species Monitoring

Todd Powell, Manager, Biodiversity Programs

Project Description: What we are going to do

The annual keystone species population trend assessment program is based on established long term sampling sites. We will analyze the collected data for trends on annual productivity, population size, and furbearer species densities. We maintain and continually update the central database with population trend assessment information, as well as local knowledge on environmental conditions.

Management Implications: Why we are doing it

Long-term monitoring of the key components of the boreal food web provides us with baseline data we can use to understand the effects of climate change and other direct land use effects on these food webs. These effects can have management implications (e.g., trapper success). The results of monitoring programs help us explain variation in cycles of hare, small mammals and furbearers. Long term, multi-year tracking of natural variations provides us with a foundation of understanding from which we can discuss and describe trends, and identify emerging issues in these populations that indicate changes in a harvested species that may require management action.

Project Activities: How we will get it done

Collecting information about population variation is most informative if conducted annually. In the summer of 2015, we will use standardized methods to measure key boreal food web components—mouse, vole and snowshoe hare populations, as well as ground berries and spruce cone annual productivity—on existing monitoring sites. .

During the winter, we will continue monitoring the abundance of small and medium-sized carnivores in 5 communities (Mayo, Faro, Watson Lake, Kluane, and Whitehorse) using track counts.

Species at Risk Monitoring

Thomas Jung, Senior Wildlife Biologist

Project Description: What we are going to do

This project has four components, each aimed at providing information on the status of species at risk in Yukon. We will use this information to inform territorial and national/international status assessments, national management planning, and continental-scale monitoring initiatives.

Bat Monitoring and Conservation: This project will allow us to monitor changes in the diversity and abundance of Yukon bats. We will also be able to highlight natural pest (mosquito) control in Yukon government campgrounds, alleviate problems with bats in picnic shelters, and provide wildlife viewing opportunities. Bats are currently identified as an Endangered Species in Canada.

Collared Pika Monitoring: We will track changes in the presence of pika in alpine ecosystems. This occupancy information will provide us with a broader indication of change in alpine ecosystems. Pikas are currently identified as Special Concern.

Wolverine Monitoring: We will be sampling wolverine carcasses collected from Yukon trappers, using these samples to assess sustainability of the harvest, as well as other factors related to the status of wolverine populations. Wolverines are currently identified as Special Concern federally and are listed under the Convention of International Trade in Endangered Species (CITES).

Peregrine Falcon Survey: Data from across North America is collected every 5 years to describe peregrine falcon population trends. As a part of this larger project, we will collect information on population trends in Yukon peregrine falcon populations.

Management Implications: Why we are doing it

These projects are carried out as part of our commitment to monitor species that may be affected by climate change and harvest. They also demonstrate innovative approaches to tackle technically difficult questions. We have designed these projects to link to similar projects being conducted elsewhere, making our data comparable on a continental scale. In addition, these projects engage stakeholders outside of government through dialogue and exchange of information, and improve the potential for stewardship of these species.

Project Activities: How we will get it done

Bat Monitoring and Conservation: Through this pilot study, we will determine the relative abundance of bats on the landscape. We will use bat detectors to monitor for bat activity in a small grid near Whitehorse between May and September. In addition, we will band and monitor bat populations at bat houses erected in southern and central Yukon—primarily in or adjacent to Yukon government campgrounds. This information will provide a pre-whitenose syndrome baseline and reasonable assessment of the impact of climate change on these.

Collared Pika: We will monitor approximately 60 sites for collared pika patch occupancy in August 2015 by surveying the sites twice and noting where pika are present. The goal is to collect 5 years of occupancy data so that we can look for annual variation, build models of change in occupancy, and correlate these changes to factors such as spring weather.

Wolverine Carcass Collection: Trappers are asked to voluntarily submit skinned wolverine carcasses from their trapping concessions. Carcasses are kept frozen until spring, when they are necropsied and biological samples are collected. It will take about 12 years to collect an adequate amount of data before we can correctly determine if the harvest is sustainable using a virtual population analyses. We currently have 8 years of the necessary data.

Peregrine Falcon 5-year productivity survey: We will partner with the Canadian Wildlife Service on a survey of the Wind River. We plan to survey the area in July, and search each known nesting area for activity and presence of this year's young.

Yukon Conservation Data Centre

Bruce Bennett, Conservation Data Centre Coordinator

Project Description: What we are going to do

Yukon Conservation Data Centre (YCDC) has a mandate to gather, maintain, and distribute information on wildlife and ecological communities of conservation concern in Yukon. The YCDC also coordinates assessments to determine conservation status for all Yukon species.

The YCDC's database currently lists and tracks information on the locations and conditions of 344 species of conservation concern in Yukon. This information is available to anyone through the Yukon Lands Viewer, but is primarily used in environmental assessment, land-use planning, conservation actions, recovery planning, and conservation status assessments. The YCDC also produces materials and hosts workshops designed to help people learn about species of conservation concern.

Management Implications: Why we are doing it

The Yukon Conservation Data Centre is part of an international network of conservation organizations and is the primary body responsible for supporting status rankings for all species in Yukon. The information we collect is critical for land-use planning, environmental assessments, and for meeting our obligations under agreements including the Umbrella Final Agreement, Canadian Biodiversity Strategy and the National Accord for the Protection of Species at Risk.

Project Activities: How we will get it done

We will collect data from multiple sources and serve as a point of contact for the public and government for all information related to rare or at-risk species in Yukon. We will continue to assign and update rankings for all Yukon species and play a proactive role in identification of rare elements (plants, animals, and ecosystems) and their conservation. The information we collect will feed directly into general status reporting for species of conservation concern.

CARNIVORES

Yukon
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Community Based Wolf Trapper Training

Peter Knamiller, Wolf Program Coordinator

Project Description: What we are going to do

Through this project we will work directly with Renewable Resource Councils (RRCs), First Nations and trappers to provide hands on training and support, advance community trapping interests, and promote an industry approach to trapping that is done in a respectful and humane manner.

Management Implications: Why we are doing it

This project supports the goals, objectives and recommended implementation measures identified in the 2012 Yukon Wolf Conservation and Management Plan. It also supports outreach for humane trapping training.

Individual trappers and communities with strong interest in management of local wolf populations see an increased wolf harvest as a means to achieve short term benefits for local prey populations. We collaborate with RRCs, First Nations and local trappers to identify priority areas of concern, and within these areas, improve capture efficiency and promote humane trapping methods—demonstrating sound and respectful resource stewardship and management.

Project Activities: How we will get it done

We will engage with RRCs and First Nations to identify priority areas for wolf harvest efforts and identify interested trappers wishing to participate in the training program. If required, we will work with our partners to seek solutions to issues related to access.

We will work with local instructors to collectively conduct trap line consultations on individual trap lines to demonstrate snare preparation and setting techniques and increase familiarity with humane trapping tools and methods.

Through our work with local trappers, we will summarize information on the efficacy of selected snare types and success of selected snaring techniques. This information will be used to advise follow up training sessions and workshops through the season until March 2016. We will determine actual trap line activities and their locations collaboratively with local communities.

Southern Lakes Grizzly Bear Population Study

Ramona Maraj, Carnivore Biologist

Project Description: What we are going to do

Our primary objective with this project is to estimate the size and trend of the Southern Lakes grizzly bear population. As a secondary objective of this project, we will improve our understanding of grizzly bear ecology in the Southern Lakes area.

Management Implications: Why we are doing it

Information on grizzly bear population status and abundance in the Southern Lakes region was established as a key information need through the Southern Lakes Wildlife Coordinating Committee's review of predators. We will use information from this project to estimate the size and trend of the Southern Lakes grizzly bear population as well as improve our understanding of grizzly bear ecology in the area. This information is important for calculating harvest quotas; identifying ways to reduce human-bear conflicts and related kills; and identifying habitat components and other habitat management activities through land-use planning and environmental assessment activities to reduce human-influences on bear mortality. Information on bear diet has been specifically requested by regional boards and councils.

Project Activities: How we will get it done

We will conduct field work for the 2015 project year from May to October. We will collect information on movement, habitat use, diet, survival rates, reproductive output, and body condition metrics. Currently, we have 8 collared bears that we will continue to monitor in 2015/16. All collars are expected to drop off in 2015/16 and efforts will be made to pick them up. At this time, we have no plans to collar additional bears.

During 2012 and 2013, we conducted a hair snagging survey to collect the DNA samples needed to estimate the size of the Southern Lakes grizzly bear population. Lab results received in 2014/15 will be used this year to derive an estimate of the size of the Southern Lakes grizzly bear population.

Wolf Population Inventory

Peter Knamiller, Wolf Program Coordinator

Project Description: What we are going to do

For this project we will collect information on wolf populations in areas where knowledge gaps currently exist. We will identify priority area(s) through discussion with communities, Renewable Resources Councils (RRCs), and/or the Yukon Fish and Wildlife Management Board (YFWMB) in conjunction with our current programs.

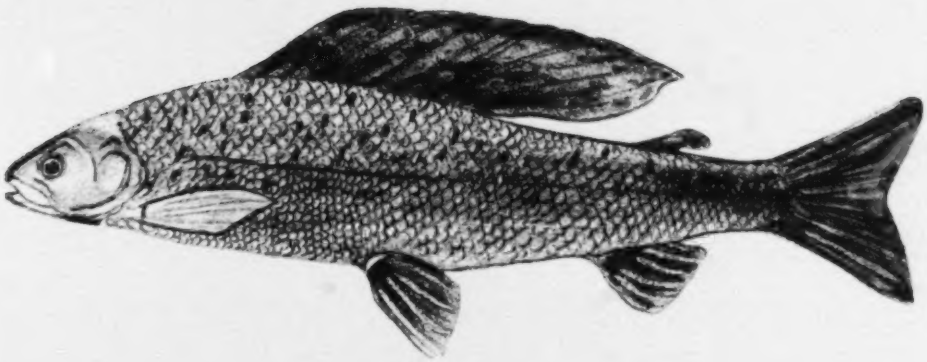
Management Implications: Why we are doing it

This survey will establish a baseline understanding of wolf distribution and population size in areas where information is currently lacking and has been identified as important by Environment Yukon, communities, RRCs, or the YFWMB. The information can be used to manage and conserve wolves as per the 2012 Wolf Conservation and Management Plan. For example, information collected can be used to provide input into land use planning and environmental assessment processes (Implementation Measure 4) and for making recommendations related to wolf harvesting opportunities (e.g., Implementation Measure 10).

Project Activities: How we will get it done

Once an area with knowledge gaps is identified, we will use a fixed wing aircraft to fly over the area so that we can estimate the number of packs, the average pack size for the area, and wolf distribution. We will conduct our survey work in mid-winter. Wolf population and distribution information will be estimated through one of two snow tracking methods: a sample unit probability estimation using a form of distance sampling or through an occupancy-based approach (i.e., presence/absence work).

FISHERIES



Yukon
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Angler Harvest Surveys

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

Each year, we conduct angler harvest surveys on several high-use recreational fisheries in Yukon. The primary goals of these surveys are to determine angler effort, catch rates, harvest, and to gather biological data from fish harvested by recreational fisheries.

Management Implications: Why we are doing it

Angler harvest surveys, in combination with other fish and fishery related assessments, are used to determine if the angler effort and harvest are sustainable under the existing regulation regime. Regular monitoring of key harvested stocks can also avoid costly interventions if harvest is too high. This information will guide allocation and regulation decision making processes. Priority areas for 2015 are several high-use recreational fisheries:

- Little Atlin Lake: This lake—last surveyed in 2007 (an 8 year gap)—is an increasingly popular summer and winter fishery. We will conduct a concurrent Summer Profundal Index Net or SPIN survey (lake trout population assessment) in 2015.
- Little Salmon Lake: This lake has never surveyed—despite housing 2 campgrounds and anecdotally substantial fisheries. We will conduct a concurrent SPIN survey in 2015.
- Teslin Lake: This lake—last surveyed in 2007 (an 8 year gap)—is a very popular summer fishery. We have planned a SPIN survey for 2016.
- The Southern Lakes System (Marsh, Tagish, Bennett lakes, and Tagish and Nares rivers): This system—most recently surveyed (Bennett Lake) in 2009—supports the largest amount of sport fishing effort in Yukon.

Project Activities: How we will get it done

We will retain field work contractors to conduct face-to-face interviews with anglers on selected sample days throughout the summer. The contractors will ask a standard set of questions about the social and biological aspects of the fishery, such as the time spent angling and the species and number of fish caught. Contractors will carry out surveys on each lake. Data from these surveys will be entered, analyzed, and reported on. Angler harvest survey work may be augmented through collaboration with First Nation subsistence fishers.

We will also conduct a series of overflights on key ice fisheries to assess effort. We will compare results from these surveys with past results to determine trends in the fishery and the sustainability of the current level of angler harvest.

Aquatic Health Monitoring for Placer Mining

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

This is an ongoing project to monitor how placer mining activities are affecting run-off water and stream organisms to ensure established mine effluent discharge standards are appropriate.

Management Implications: Why we are doing it

The 2003 Record of Agreement commits the Yukon government, Council of Yukon First Nations, and the federal Department of Fisheries & Oceans (DFO) to develop and implement a new regime for placer mining and its impacts on fish habitat. Yukon government and DFO are jointly responsible for carrying out Aquatic Health Monitoring.

Aquatic Health monitoring for placer mining, when combined with EMR's Water Quality Objectives monitoring and Economic Health monitoring, inform the Yukon Placer Secretariat's adaptive management process. Through this process, decisions are made to change or modify effluent discharge standards for placer mining to maintain and protect the health of Yukon aquatic environments.

Project Activities: How we will get it done

Field work primarily takes place in placer mined watersheds. Forty sampling sites are selected annually at a coordination meeting each spring. Data gathered is shared to support regulatory decisions made under the Placer Regime. In a typical year, we will sample 15 sites by helicopter and 5 sites by boat/road access.

Field work is done between July 15th and August 7th each year so that sampling of aquatic benthic macroinvertebrates is done consistently. When the field data collection is complete, the benthic insect samples are analyzed by an expert in the field. When the data are available, we will assess each site we visited to determine whether the aquatic environment is healthy or not.

Results of the monitoring will be communicated through the Yukon Placer Secretariat in the Annual Monitoring Report, a component of the annual adaptive management process.

Fish Health and Lab

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

This is an ongoing program for which we conduct laboratory analyses of fish and other fish-related biological specimens (e.g., parasites, stomach contents, aquatic organisms) to assess fish health and condition. We also sample fish for contaminants; coordinate aquatic animal health activities, including disease screening for introduced and transferred fish; and identify fish diseases and parasites.

Management Implications: Why we are doing it

This program supports our ability to provide quick feedback to the public if concerns about fish disease or parasite issues arise. Ongoing monitoring contributes to the safety of fish stocks through the maintenance of appropriate screening processes.

Project Activities: How we will get it done

We will monitor the health of fish populations throughout Yukon by examining diseased fish turned in by the public or caught in netting studies. Some work will focus on areas and stocks that have been identified as having potential or actual disease or parasite problems.

We will collect and examine stomach contents of 250 – 500 fish obtained during other surveys (e.g., SPIN, Angler harvest surveys, angler submitted samples, etc.). Stomach content data will be incorporated into reports on fish populations where appropriate. We will monitor the health of hatchery-raised fish at the Whitehorse Rapids Fish Hatchery through disease screening to ensure that no diseased fish are released into the wild.

We will coordinate the collection of samples from fisheries surveys and public submissions and submit them for contaminants testing. Results will be communicated to the public—in part through annual updates to the Fisheries Synopsis. We will continue to participate on the Yukon Contaminants Committee. Disease information will be incorporated, as necessary, into the Fish Health Handbook publication. Information will also be provided directly to the public when concerns are raised or fish with health problems are submitted for inspection.

Fisheries Stock Assessment and Monitoring

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

Stock assessments are the major source of long-term fisheries data and are collected in a systematic and consistent fashion year after year. This year, we will conduct stock assessments, including aging, of lake trout in Little Salmon, Little Atlin, Marsh, Tagish/Nares, Watson, and Chadburn lakes. We will also conduct burbot stock assessments in Canyon and Ladue lakes. We will continue to develop the best approaches for monitoring pike and lake productivity in Yukon.

Management Implications: Why we are doing it

The information collected during this work allows us to manage fish resources; maintain healthy fish stocks and sustainable harvest opportunities; assess the status of fish stocks; and monitor changes over time that may be occurring due to human activities (e.g., harvest) and environmental factors (e.g., climate change). Ongoing and regular evaluation of important stocks is necessary to detect and respond to changes in a timely manner.

Where appropriate, stock assessment data are used in conjunction with other data (e.g., angler harvest survey data) to develop management strategies for water bodies and fish populations of interest.

Project Activities: How we will get it done

Lake trout: We use the Summer Profundal Index Netting (SPIN) method for assessing key populations of lake trout and whitefish. We will carry out SPIN surveys on Little Salmon, Little Atlin, Marsh, Tagish/Nares, Watson, and Chadburn lakes. Lake trout assessments of these lakes are supported by planning objectives, Renewable Resource Councils and First Nations engagement, conservation concerns outlined in Status of Yukon Fisheries, and method development priorities.

Burbot: We will continue to develop a burbot mark-recapture method as we balance short term management information needs and long-term model development for broad scale management of burbot. We will focus on burbot in Canyon Lake and will assess burbot abundance, condition, growth, and health. We will also carry out a survey on Ladue Lakes to understand how burbot density changes with changing productivity and harvest pressure.

Pike: We will begin to develop a method to monitor northern pike. This component involves: 1) a review of potential monitoring methods (to be conducted by a qualified contractor), 2) potential testing of method(s) in Yukon lakes, and 3) contemplating the application of the method to Yukon fisheries management. The overall goal is to develop and provide direction for the implementation of northern pike monitoring methods in Yukon in the context of current programs and resources.

Productivity: We will continue our work towards an updated and revised understanding of Yukon lake productivity based on physical and chemical measures. Estimates of sustainable harvest for each lake are based on lake productivity parameters. Updating these methods to reflect the most recent data and best available science will improve our ability to effectively manage Yukon's freshwater fisheries.

Movement and Population Structure of Lake Trout in the Southern Lakes

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

This project involves tracking movement of lake trout within the interconnected Southern Lakes system (Marsh, Tagish, Nares, Bennett, and Atlin lakes) using autonomous telemetry receivers stationed between the lakes and transmitters implanted within lake trout. Collection and analysis of genetic material from tagged trout, as well as current and archival material from trout sampled throughout the Southern Lakes, will allow us to assign multi-annual, inter-lake migration behaviour to specific populations.

Management Implications: Why we are doing it

Bennett, Nares, Windy Arm, Tagish, Marsh, and Atlin lakes are all closely connected by large rivers that allow fish to readily migrate between water bodies. Movement of lake trout among these lakes is apparent, through both local and traditional knowledge, and past tagging studies. Both the interconnected Southern Lakes and the rivers that connect them are popular and productive destinations for anglers seeking lake trout.

Effective management of lake trout within the interconnected Southern Lakes requires an understanding of the contribution of each lake to the system-wide lake trout population. Without this understanding, assigning harvest pressure at specific locations to different sub-populations within the lakes is not possible, and overharvest of these sub-populations cannot be assessed reliably. Results from this study will help us make informed decisions about the sustainability of Southern Lakes lake trout harvest.

Project Activities: How we will get it done

In spring, we will download and analyze the data recorded by the autonomous receivers (16 in total). We will deploy transmitters in lake trout captured by volunteer anglers in Marsh Lake (10 transmitters). In summer, we will deploy transmitters in lake trout from SPIN surveys conducted on Marsh and Tagish lakes (30 transmitters per lake) and collect genetic samples from Southern Lakes fisheries (recreational, subsistence and commercial). In fall, we will use fish with affixed transmitters to identify new spawning locations and we may deploy an additional 5 – 10 transmitters. This work will be carried out mostly in Bennett and Marsh lakes, where we currently lack data on spawning

locations.

We will also develop and begin a collaborative approach for the analysis of genetic data collected over the 3 year proposed tenure of this project.

An angler harvest survey of the Southern Lakes and SPIN surveys of Marsh and Tagish lakes will provide further information on sub-population abundance, harvest, genetic identity and the spatial distribution of Southern Lakes lake trout, and provide trout captures for transmitter deployment. We will complete analysis and reporting on this genetics and movement data during the winter 2015/16.

Stocked Lakes Program

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

Suitable pothole lakes are stocked on a rotating basis, providing easily-accessible fisheries that are particularly attractive to families and first-time anglers. This program also involves an educational component, including interactive programs on lake stocking, angling pressure and responsible angling practices.

Management Implications: Why we are doing it

The maintenance of the stocking program (currently 20 lakes across Yukon) provides an important set of opportunities for Yukon anglers—over 20% of resident anglers fish stocked lakes, and Yukoners spend over 6,700 days angling in stocked lakes each year. Wild stocks of fish in Yukon are slow-growing and susceptible to overharvest if subject to excessive fishing pressure. Providing alternative angling opportunities close to population centres alleviates some of the fishing pressure from wild stocks without requiring more restrictive angling regulations.

Project Activities: How we will get it done

This is an ongoing program, with a stocking rotation that ensures continued viable fisheries at stocked lakes across the territory. In 2015/16, Chadden, Coffee, Fisheye, Hidden 1, Hour, Long, Lucky, Rantin, Scout, Veronica and Whiskers lakes are due for stocking. We will stock these lakes in late May – early June with rainbow trout and kokanee salmon from Whitehorse Rapids Fish Hatchery. Fry transportation and release will be coordinated among Fisheries and Regional staff, as well as volunteers from Yukon Fish and Game Association.

As part of this program, we will also deliver an interactive Hidden Lakes Fry Release public event in Whitehorse in late May—an event that has become very popular, particularly among families with young children.

Activities in this program also include spawn takes at Whitehorse Rapids Fish Hatchery (June and September) and the purchase of eggs and fry (October and December).

HABITAT

Yukon
Environment

Fish, Wildlife and Habitat Planning

Michelle Sicotte, Planner

Project Description: What we are going to do

Fish and wildlife management plans are developed by the planning program within the Habitat Programs section. We develop plans for special management areas, species of conservation concern, and community fish and wildlife work plans. We work cooperatively on these plans with First Nation governments and boards and councils to address management challenges.

Our 2015-2016 fish and wildlife planning priorities are:

- Management Plan for Elk in Yukon (Review)
- Grizzly Bear Conservation and Management Plan
- Community-based Fish and Wildlife Work Plan for the Champagne and Aishihik First Nations (CAFN) Traditional Territory
- Pickhandle Lakes Habitat Protection Area Management Plan
- Tagish River Habitat Protection Area Management Plan
- Whitefish Wetlands Habitat Protection Area Management Plan
- Tracking plan implementation

Management Implications: Why we are doing it

This program supports the development of fish, wildlife, and habitat management plans across Yukon. These plans set out goals, objectives and recommendations related to management of important fish, wildlife and habitat values. Planning is also part of Yukon government's obligations under Yukon First Nation final agreements. These plans help us prioritise our department budgets and support our participation in federal species at risk processes and requirements.

Project Activities: How we will get it done

Management Plan for Elk in Yukon: We will develop a revised elk plan to address current issues. We will continue to engage with First Nations, Yukon Fish and Wildlife Management Board, Renewable Resources Councils (RRCs), and stakeholders in to develop the draft plan and will provide opportunity for public review of the updated management plan.

Grizzly Bear Conservation and Management Plan: We will work in partnership

with the Yukon Fish and Wildlife Management Board to develop a grizzly bear management plan. Through the planning process we will look at all relevant factors related to grizzly bear management, including national and international considerations. The process will provide for input from mandated boards, councils, Yukon First Nations, the Inuvialuit, stakeholders and the public.

Community-based Fish and Wildlife Work Plan for CAFN Traditional Territory: We will work with CAFN and Alsek RRC to finalize the work plan.

Habitat Protection Areas: Work on the Tagish River, Pickhandle Lakes, and Whitefish Wetlands Habitat Protection Area Management Plans are ongoing. Plans are being developed with First Nation partners and are guided by Final Agreements and land use plans. Funding for habitat protection area planning comes from land claims implementation.

Pickhandle Lakes Habitat Protection Area Management Plan: Through operational funding, we support White River First Nation member participation in planning by providing funds for travel, accommodation, and time for their delegate to attended steering committee meetings.

Tracking plan implementation: We will work with Information Management & Technology (IMT) to determine the best method to update the structure of the database, then contract changes to the database with support from IMT.

Habitat Suitability Model—Upper Stewart River

Heather Clarke, Habitat Biologist

Project Description: What we are going to do

This project involves identifying the important spring/summer and summer habitat for both sheep and caribou in the Upper Stewart River watershed. The study area includes a region in which mining exploration and development are high and where both sheep and caribou have recently been surveyed (2013) during these seasons. We will model habitat suitability separately for each species using local knowledge, collected from the community; and recently-collected survey data. In total, four habitat suitability models and maps (two per species) will be created.

Management Implications: Why we are doing it

The management of wildlife and their habitat is dependent upon understanding species-habitat interactions and identifying the abundance, distribution, and availability of important habitats. A key objective of the Na-Cho Nyäk Dun First Nation's Community-based Fish and Wildlife Work Plan is to develop habitat suitability maps as tools to inform environmental assessments and land use planning.

The Upper Stewart River is an area of high mining exploration and development and represents an important landscape to develop these tools.

Project Activities: How we will get it done

We will hold a community workshop in September 2015 to generate local knowledge maps. Participants will be selected by our Regional Biologist based on his familiarity with their level of experience with the species of interest. The workshop will occur over one day and will follow the protocols outlined in the 2012 Knowledge-based Habitat Suitability Modeling Guidelines document.

We will use information gathered during the workshop, as well as relevant information from previous work, to create a habitat suitability model and map for each species and season of interest. We will present these results back to the workshop participants for comments, and revise accordingly.

Lichen Mapping; Assessment of Alternatives

Bruce McLean, Senior Habitat Biologist

Project Description: What we are going to do

Habitat Programs has previously issued contracts for lichen mapping in several caribou herd ranges including the Fortymile, Klaza, and Ibex caribou herds. While two different methods have been applied in these projects, accuracy assessments of both methods indicate relatively good results. This project will allow us to determine the best approach and methods we should use for future lichen inventory and mapping projects.

Management Implications: Why we are doing it

We are conducting this project to evaluate two existing methods used for mapping caribou forage lichen in Yukon in order to determine the best methods for future projects. Lichen abundance and distribution mapping provides a tool that can be used for multiple habitat and species management purposes including, but not limited to, caribou habitat suitability mapping, fire risk mapping, land cover classification and validation, and predicting the effects of climate change.

Project Activities: How we will get it done

Two previous lichen inventories for the Fortymile and Klaza caribou herds overlap. Within this area of overlap, we will work with a contractor to conduct an accuracy assessment using independent data to determine which mapping technique most accurately captures what is present on the landscape. The contractor will prepare a report including methods, results, and implications for future lichen mapping methods.

Sharp-Tailed Grouse Habitat Needs Assessment

Mike Suitor, North Yukon Regional Biologist

Project Description: What we are going to do

We will examine sharp-tailed grouse movements, productivity, and adult mortality in the Indian River drainage in order to determine the location of key sharp-tailed grouse habitats. This identification will enable us to determine what mitigations apply to local populations affected by placer mining activity in this region.

Management Implications: Why we are doing it

Sharp-tailed grouse utilize very specific habitats, known as "leks", where they conduct breeding, brooding and rearing of young. These sites are vulnerable to disturbance and expose them to harvest potential. It is important to determine the appropriate mitigations around known lek sites to ensure viable populations can be maintained where they overlap with industrialized landscapes.

This project meets Yukon government's interest in examining the impact of human activities on biodiversity, specifically for harvested species. Sharp-tailed grouse are not widely distributed in Yukon and their specific associations with key habitats increase their vulnerability to human activities.

Project Activities: How we will get it done

We will capture and place transmitters on 10 female grouse in April, 2015, and follow their location and brooding success through the summer and fall. We will retrieve and refurbish transmitters following the first year of deployment in order to prepare for a subsequent placement period.

Sheep Winter Range Assessment

Bruce McLean, Senior Habitat Biologist

Project Description: What we are going to do

We will assess the feasibility of using prescribed burns as a management tool for thinhorn sheep wintering habitat in Yukon. Through natural succession and climate change, treeline in Yukon is advancing into alpine areas and may be affecting the availability of sheep wintering habitats. Understanding the feasibility of using prescribed burns as a management tool in relation to sheep winter range may provide additional habitat-based tools for sheep management.

Management Implications: Why we are doing it

Winter ranges of thinhorn sheep typically occur on south facing, grassy slopes. Through natural succession, shrubs and trees that eventually grow on these grassy habitats can reduce the quality of winter ranges to the point they are no longer suitable for sheep. Prescribed burns have been used to manage the growth of these shrubs. This project will provide us with information about a potential tool for thinhorn sheep management in Yukon, including feasibility, study design, cost, and monitoring timelines.

Project Activities: How we will get it done

We will review past studies of prescribed burning conducted in Yukon and consider related examples of studies done in other jurisdictions. We will interview knowledgeable local experts to help identify potential suitable habitats and locations for burn and control sites.

A contractor will be hired to describe proposed experimental design, study goals, cost, and monitoring needs. Based on the proposed approach, we may conduct pre-burn site assessments in 2015-16.

Yukon Wetlands Policy

Bruce McLean, Senior Habitat Biologist

Project Description: What we are going to do

This project will assist us with the development of a wetlands policy for Yukon. The policy will apply to Yukon government, but the process would be open to participation by First Nations, other land managers, and non-government organizations. An interdepartmental working group will develop a draft policy, conduct consultation with the public, First Nations and management bodies, and support implementation.

Management Implications: Why we are doing it

Development and implementation of a Yukon wetlands policy will provide clarity to land use planning processes, environmental assessments, and regulators. A wetland policy is needed to help define wetland values, support improved mapping and classification of wetlands, and assist with tracking natural and human-caused changes to the ecology and function of these areas.

Project Activities: How we will get it done

We will work with an interdepartmental working group and senior management to develop a Yukon wetlands policy. We will engage other departments, agencies, First Nations and non-government organizations in the process to develop a broad based, public supported policy.

Wildlife Key Area Surveys

Val Loewen, Habitat Inventory Coordinator

Project Description: What we are going to do

Wildlife Key Areas (WKAs) are areas that are most restricted in availability, most valuable, or where wildlife is most vulnerable. We conduct surveys to identify WKAs so that they can receive a higher level of consideration or protection in development assessment reviews and land use planning. Our priority WKA surveys for 2015-2016 are:

- Upper Stewart River watershed (sheep late winter range)
- Sheep Mountain and Mt. Klotz area (sheep spring lambing)
- South Fork Range and Selwyn Mountains (sheep spring lambing)
- North Yukon, Kluane, Northern Tutchone regions (sharp-tailed grouse spring breeding)

Management Implications: Why we are doing it

Knowledge of WKAs will provide the basis for recommendations on avoiding impacts or mitigating mining and other resource development activities. Data collected during these surveys in combination with other distribution data can contribute to habitat suitability modeling and can assist with developing population and habitat goals.

Project Activities: How we will get it done

Specific activities for each WKA survey are described below:

1. Stewart River watershed: We will conduct a helicopter survey in March 2016 over suitable habitat in the upper Stewart River mountain ranges and map observations of sheep. We will collate baseline data on sheep winter range in the areas overlapping with active mining claims for use in environmental assessments and for the WKA database.
2. Sheep Mountain and Mt. Klotz: We will fly areas suspected of having lambing cliffs adjacent to known distributions of sheep in the general survey area. We will time the survey during or immediately following peak lambing activities. During the survey we will map the location of individuals and confirm lambing status. We will keep all disturbances to ewes and lambs to a minimum given their sensitivity during this time. Data on sheep lambing and summer habitats will be submitted to the

wildlife survey database.

3. South Fork Range and Selwyn Mountains: We will use a helicopter to survey suitable habitat in the South Fork and Hess mountain ranges, and map observations of sheep lambing areas, mineral licks (if observed), and alpine raptor nests. We will submit data on sheep lambing and summer habitats to the wildlife survey database and add alpine raptor nesting sites to the bird observation database.
4. North Yukon, Northern Tutchone and Kluane Regions: We will work with a consultant to survey high priority areas to identify the presence of Sharp-tailed grouse between approximately March 15 and May 20. We will also locate leks, if observed. We will focus surveys on areas that have been identified during previous environmental assessments and on existing WKA polygons in areas that are likely to be developed.

Yukon Surface Disturbance Mapping

Heather Clarke, Habitat Biologist

Project Description: What we are going to do

We will assess, test, and address data gaps for a Yukon wide surface disturbance map. For this project, human footprint is the combined land surface disturbances caused mainly by industrial activities, which include, but are not limited to, roads, mines, clear-cuts, well sites, pipelines, transmission lines, and agricultural clearings visible on aerial photography or earth observation satellite imagery.

Management Implications: Why we are doing it

We are regularly tasked with evaluating proposals for new developments and predicting potential impacts to species in the area. This project will allow us to assess incoming projects with respect to current disturbance on the landscape and more accurately predict the true impact of new developments. In addition, recent innovations in species predictive modeling require Yukon-wide disturbance mapping to realistically estimate abundance on the landscape and set sustainable harvest rates. This project is a critical missing link in providing defensible estimates of wildlife populations to stakeholders.

Project Activities: How we will get it done

Using an initial Yukon-wide surface disturbance map completed in 2014-15, we will assess, test, and address data gaps in accordance with guidelines developed by Environment Yukon's Information Management & Technology Branch. We will identify qualified contractors through an existing Standing Offer Agreement

OUTREACH AND COMMUNICATION

Yukon
Environment

Aquatic Invasive Species

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

Through this project we promote public awareness and prevention of the unintentional introduction or spread of Aquatic Invasive Species (AIS). This year we will focus on three aspects:

1. Education and Outreach: We will focus on encouraging behaviours that prevent the spread of AIS through the development of communication materials. This work is an ongoing initiative and builds on knowledge acquired through public surveys in 2014-15.
2. Surveillance: We will develop cost-effective ways to assess the presence of AIS (e.g., zebra mussels) to support early detection and rapid response. We will also support public engagement through reporting of suspected AIS detections.
3. Impact Studies: We will sample sections of streams impacted by didymo algae and compare these to nearby sections that are not impacted to provide information on the specific habitat impacts.

Management Implications: Why we are doing it

The introduction of AIS could pose significant risk to Yukon's economy and aquatic environments. This project will help mitigate this risk by raising awareness and understanding of which activities are most likely to result in accidental introduction of AIS, and what steps can be taken to avoid AIS introduction and spread. Surveys of AIS will support early detection and rapid response. Impact studies help to quantify the concern and demonstrate impacts in a Yukon context.

Project Activities: How we will get it done

Education and Outreach: We will deliver communication materials that help to raise the level of awareness of anglers and boat operators about aquatic invasive species. These materials (including signage at boat ramps, pamphlets, and online information) promote behaviours that prevent the introduction and spread of aquatic invaders.

Surveillance: We will use low cost devices to monitor for zebra mussels. We will install these on the bottom of lakes near popular boat launches. We will also examine the usefulness, costs, and benefits of using environmental DNA to

monitor for key invasive species.

Impact studies: Using comparisons between streams with didymo algae and nearby streams that are unaffected, we will using standardized methods to measure the impact didymo algae is having on stream communities, particularly freshwater invertebrates.

Bison Hunter Effort Survey

Rob Florkiewicz, Wildlife Harvest Negotiator

Project Description: What we are going to do

Working with the Yukon Bureau of Statistics, we will survey hunters who purchased a bison seal in the 2014 hunting season to gain an understanding of success rates, the methods they utilized, the effectiveness of the bison hunter education workshops, the amount of effort they exerted, and general satisfaction of their experience.

Management Implications: Why we are doing it

Understanding what variables affect the success rate and satisfaction of bison hunters will support decision-making that happens annually in managing bison harvest to meet population goals.

Project Activities: How we will get it done

We will mail out surveys in May (after bison hunting season closes) to all licensed Yukon resident hunters who acquired a bison seal in 2014. Hunters who have not returned a survey by June will be called and invited to complete the survey over the telephone. We will complete the final survey report by October 2015.

Fish and Wildlife Communications

Tyler Kuhn, Biologist – Information Specialist

Project Description: What we are going to do

This project provides assistance to Branch staff in developing and producing technical and plain language reports and other materials for varied audiences (public, legislature, boards and councils). Through this project, we also establish and maintain publication review protocols and authorizations to ensure consistency and effective information transfer to the public.

Management Implications: Why we are doing it

Communication is central to all of our primary responsibilities. By producing and providing accessible, trustworthy, and useful information we will support the meaningful participation of Yukon people in planning and decision-making processes.

We will assist with the numerous requests from the public; land claim Boards/Councils; and other interested parties, including local, regional, national, and international organizations for current, up-to-date information associated on our programs.

Project Activities: How we will get it done

- We will produce the annual Fish and Wildlife Branch project reports and annual summary report.
- We will provide editorial advice and support to staff, as needed.
- We will document established and evolving Branch communication processes and protocols.

Fisheries Education and Communication

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

We will develop and deliver programs that educate anglers about overharvested and stressed populations as a way to decrease angling pressure without regulatory measures. We will accomplish this with signage at lakes and streams or targeted messaging about fish populations in jeopardy as well as partnership programs. Our education initiatives will also focus on communicating information about regulations to improve the rate of compliance. This will be done along with regular compliance monitoring and will focus on topics like the use of barbless hooks, and local size, catch and possession limits. We will also develop and deliver programs that promote angling, particularly to young people.

Management Implications: Why we are doing it

The Status of Yukon Fisheries identifies the importance of public education. Education and communication are ongoing initiatives critical to effective management. An informed, engaged and responsible angling public will benefit fisheries resources and anglers alike, and promote sustainable management and compliance with fisheries regulations. Education programs will also help engage young anglers, ensuring that angling remains a relevant activity for Yukoners into the future.

Project Activities: How we will get it done

We reach out to the angling public through activities, signage where people fish, and free publications. We will develop and deliver public activities, including Family Fishing Weekend which promotes angling and engages young people. We will host a free special event during this weekend. Where we need to communicate with anglers about particular stocks and populations, we will design and install signage. Examples include signage at Snafu, Tarfu, Louise, and Pine Lakes, which inform anglers about the depleted status of the lake trout population.

We will provide reminders to anglers about fishing regulations on the lakes where they plan to fish by installing large and easy to read signs at popular fishing locations and boat launches. These signs provide specific information on regulations for that waterbody. Conservation officers and regional biologists help identify which lakes and rivers are in need of new or updated signs.

We will ensure that fisheries publications are available and up to date. Work here includes revising publications in advance of reprinting. These include:

- Fishing on Yukon Time: a guide to fishing in Yukon
- Angler's Guide Stocked Lakes in Yukon
- Common Parasites of Yukon Freshwater Fishes
- Status of Yukon Fisheries
- Yukon Freshwater Fishes
- Angler Harvest Surveys and Stock Assessment Reports

We will continue to provide tools to facilitate and encourage ethical and legal angling. These include give away promotional materials like sticker rulers for angler's boats and hats for anglers who provide information on tagged fish they catch.

National Recreational Fishing Survey

Oliver Barker, A/Senior Fisheries Biologist

Project Description: What we are going to do

We will continue to develop and implement the National Recreational Fishing survey 2015. Every five years, federal, provincial and territorial governments team up to survey anglers across the country. This information contributes to a long-term series of high quality data to help make fishery management decisions.

Management Implications: Why we are doing it

The National Recreational Fishing survey provides us—and related stakeholders—with a broad set of data on which to base fishery management decisions.

Project Activities: How we will get it done

We will collaborate with the federal Department of Fisheries and Oceans to design and implement the survey. The 2015 survey will, for the first time, be offered online. The costs of implementing this survey for a first online version are slightly higher but costs savings will be realized in the future on survey design and particularly on analysis. This is year one of a two year project.

Ross River Harvest Monitoring

Alain Fontaine, Liard Regional Biologist

Project Description: What we are going to do

The North Canol Road is an access point for licensed and First Nation hunters as well as hunters from the Northwest Territories (NWT). The local community has expressed concern that harvest has increased over time. In response, we will reopen a check station to collect harvest data and improve communication with hunters travelling on the highway at the ferry crossing on the Pelly River. We will re-engage the community through the collaborative Game Guardian program to educate and communicate with caribou hunters, and to collect harvest data.

Management Implications: Why we are doing it

Conservation and effective management of moose and caribou populations in the region is a key concern given their value as a subsistence harvest resource for the Ross River Dena, as well as harvest interest from resident and non-resident hunters. The management implications of the Ross River Harvest Monitoring Program are threefold: collection of harvest information, education and outreach, and building relationships and opening dialog between our staff and the local community.

Project Activities: How we will get it done

Pelly River Game-Check Station: This project was canceled for the 2015/16 season. Funds have been reallocated to other priority projects.

Finlayson Caribou Game Guardian Program: We will conduct the Game Guardian monitoring of First Nation harvest by patrolling the Robert Campbell Highway within the winter range of the Finlayson caribou herd. Patrols will be carried out primarily by a Yukon government employee accompanied by a Ross River Dena community member. We will begin patrols in early January and continue until mid-April—recording information on species, sex, age groups, kill sites, and occasionally collecting samples to be analyzed by the department.

Technical Reporting Program

Tyler Kuhn, Biologist – Information Specialist

Project Description: What we are going to do

Through this ongoing program, we work to develop tangible and often novel products to enhance the accessibility of technical information for members of boards, councils, and other interested Yukoners. Previous projects include preparation of online technical reports and the Wildlife Management 101 videos.

Management Implications: Why we are doing it

This program supports our departmental objective to improve the sharing and communication of data and information.

Project Activities: How we will get it done

We act in an advisory and mentoring role for all Branch staff, as well as administering contracts in support of identified communication needs.

This year, we will focus on the development of a suite of products with the theme "how we count things".

Wildlife Viewing

Carrie McClelland, Wildlife Viewing Biologist

Project Description: What we are going to do

Through the Wildlife Viewing Program, we provide opportunities for the public to learn about Yukon's environment, which fosters a better understanding of the natural world. This supports our departmental strategic goals of promoting environmental stewardship and sharing information with Yukoners to inspire appreciation of Yukon's environment. Opportunities to view and appreciate wildlife are an important component in fostering stewardship and respect for our environment.

Management Implications: Why we are doing it

Creating awareness in the public about wildlife viewing opportunities and biodiversity supports conservation and management programs. We enhance the visitor experience in Yukon, fosters greater understanding and appreciation in residents and visitors for the natural attributes of Yukon, and increase opportunities for residents and visitors to engage in conservation and stewardship. This program directly supports the goals of Environment Yukon's Strategic Plan to promote environmental stewardship and share environmental information with citizens. Furthermore, Chapter 16 of the Umbrella Final Agreement requires Yukoners to consider the non-consumptive uses of our wildlife.

Project Activities: How we will get it done

Throughout the territory, and throughout the year, we deliver a wide variety of special events and programs, and create opportunities for residents and visitors of all ages and interests to engage in watching and learning about wildlife. Our major projects are:

- Wild Discoveries: This series of interpretive events continues to engage Yukoners in wildlife management issues and educate them about our natural world. We deliver evening and weekend programs with assistance from other Branch biologists and staff, from June to September.
- Publications and print: We will review and update information regarding Yukon wildlife and habitat as needed. Interpretation development may include website information, panel development, and printed matter.
- Digital app for wildlife viewing in Yukon: We are partnering with the

Department of Tourism and Culture to research the options, needs, and possibilities for using app technology, and develop a plan for implementing its use.

- Lewes River Bridge: As part of the Department of Tourism and Culture's plan for celebrating the 75th anniversary of the Alaska Hwy, we will work with the Historic Sites Unit to update and refresh our rest areas.
- Celebration of Swans & Swan Haven: We highlight activities surrounding spring bird migration in April at Swan Haven. Swan Haven annually hosts more than 2,000 Yukon residents, including over 600 school children. Events are hosted in Whitehorse, Tagish, Carcross, Teslin, and Burwash. A Celebration of Swans is the most popular and widely celebrated wildlife event in Yukon.

To encourage stewardship, raise awareness of biodiversity issues, and develop local viewing opportunities, we develop publications and sites with a variety of partners. In 2015-16, we will develop the following products:

- Whitehorse: We will maintain existing signage in the city's Significant Wildlife Areas, and contribute to the development of new signage as needed by the community.
- Mayo: Maintenance of existing, and evaluation of potential, viewing sites is part of the Community-based Fish and Wildlife Work Plan for the Na-Cho Nyäk Dun First Nation Traditional Territory (2014-2019).
- Keno: We will continue to work with local community members to update and maintain the Alpine Interpretive Centre and provide safe and respectful access to the alpine.
- Faro/Ross River: We will continue to work with the community to improve viewing opportunities and support the Crane and Sheep Festival.
- Watson Lake: We will create a guide to wildlife viewing in the Watson Lake region.
- Dawson City: We will work with City of Dawson on providing natural history interpretation on their municipal trail network.

We will present on non-consumptive approaches to wildlife management at Renewable Resource Council meetings and provide resources and support to these public bodies to address non-consumptive wildlife management solutions.

Wood Bison Cooperative Management

Thomas Jung, Senior Wildlife Biologist

Project Description: What we are going to do

The Yukon Wood Bison Technical Team (YWBTT) facilitates an inclusive process among relevant management agencies and councils to make recommendations toward the adaptive management of wood bison—a species of concern for communities and the focus of a popular resident hunt.

Management Implications: Why we are doing it

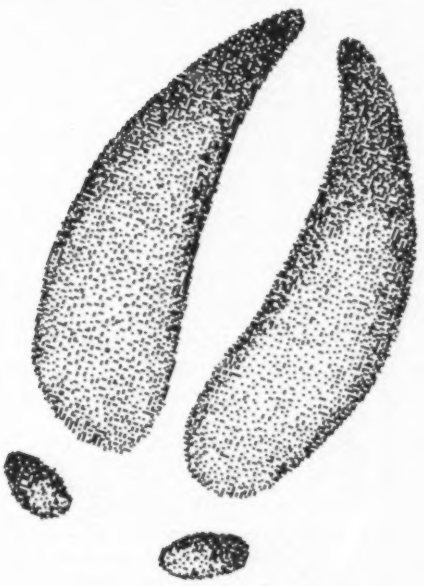
Through this project, we support the activities of the YWBTT in fulfilling their mandate to develop and present recommendations for the management of Yukon wood bison to the Yukon Wood Bison Management Committee.

Project Activities: How we will get it done

Representatives from the Fish and Wildlife Branch will chair and participate in the technical team, as well as pay for the cost of hosting the meeting. There are two meetings annually—one in the spring and one in the fall. The team will also develop information materials that can be published online, and may undertake special projects, such as a review of promising management activities in other jurisdictions, or an annual review of progress toward plan implementation.

UNGULATES

(hoofed mammals)



Yukon
Environment

Alsek Moose Census

Shawn Taylor, Kluane Regional Biologist

Project Description: What we are going to do

We will conduct an early-winter moose census survey in the Dezadeash River, Granite Creek, Tatshenshini River, and Takhanne River Moose Management Units (MMUs) to estimate population density, composition, and distribution.

Management Implications: Why we are doing it

This project will provide an updated population estimate for moose in the Alsek survey area, which is comprised of 4 Moose Management Units. The 2008 census indicated a population decline of 44% from 1998 and was the lowest recorded density for the area. The Alsek area is an important moose harvesting area for the Champagne and Aishihik First Nations. The management of these MMUs has been identified as priority by the Alsek Renewable Resource Council (RRC).

Nine permits are issued annually for GMS 7-01 through 7-12 for resident hunters. The Champagne and Aishihik First Nations provide harvest data that allow us to better estimate total harvest for individual MMUs. Currently, Dezadeash and Granite Creek MMUs have minimum harvest rates approaching and/or exceeding sustainable levels based on the 2008 population estimates. Relatively easy access routes in the area increase the vulnerability of these populations.

An updated population estimate is required to determine the population trend and develop sustainable harvest strategies for moose in this area.

Project Activities: How we will get it done

We will conduct the survey in October or November 2015 using a new model-based approach. This new approach will incorporate expert local knowledge and habitat information (e.g., mapped vegetation, landscape, and routes) to estimate the number of moose in the Alsek area. Over the winter, we will work with the Champagne and Aishihik First Nations to generate a better understanding of harvest and animal distribution in the area.

Caribou Rut Counts

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

We will conduct fall rut composition counts of key caribou herds to assess their status, track recovery, and measure the effectiveness of management actions. Rut counts for the following herds will be conducted in 2015/16:

- Carcross and Ibex caribou herds
- Chisana caribou herd
- Ethel Lake caribou herd
- Tatchun caribou herd

Management Implications: Why we are doing it

Northern Mountain caribou are listed as "Special Concern" under the federal Species At Risk Act and the health of these herds is a high priority for management partners in Yukon. Annual monitoring of herds helps inform management decisions, track harvest levels, and provides a long-term dataset that helps track demographic changes in mountain caribou across the territory. Annual monitoring is also essential for recording caribou population responses to changing climate.

Herds chosen in 2015/16 were based on past trends and community priorities:

- The Carcross and Ibex caribou herds have been the focus of a long term recovery program. Monitoring was identified as a priority by local First Nations, boards and councils, and the Southern Lakes Wildlife Coordinating Committee.
- The Chisana Caribou herd has been the focus of a long term recovery program conducted in partnership with Alaska Department of Fish and Game. Monitoring was identified as a priority in the international Management Plan for the Chisana Caribou Herd.
- There has been a voluntary hunting closure on the Ethel Lake herd since 2002. Monitoring this herd has been identified as a high priority by the communities of Mayo and Pelly Crossing.
- Harvest of the Tatchun Caribou herd is at or above sustainable limits and the population estimate is outdated. Monitoring of this herd has been identified as a high priority by the communities of Carmacks and

Pelly Crossing.

Project Activities: How we will get it done

We conduct rut count surveys using helicopters flying along high alpine plateaus where caribou breeding occurs. When groups of animals are encountered they are classified into one of four categories: calves, cows, immature males or mature males. The tallies in each category are used to calculate the adult sex ratio (bull: cow ratio) and the recruitment rate (calf: cow ratio). These ratios are standard indicators of caribou population health—they allow us to highlight potential concerns and make predictions about population status. We will conduct this year's rut count composition surveys during late September and early October.

Fortymile Caribou Herd Monitoring

Mike Suitor, North Yukon Regional Biologist

Project Description: What we are going to do

This project supports monitoring the movements and seasonal distribution of the Fortymile caribou herd by tracking GPS collared caribou in the herd. Collar data, in combination with information from field studies conducted on summer range by the Alaska Department of Fish and Game (ADFG), will allow us to develop habitat models that determine the herd's year round range, summer range carrying capacity, and current and future habitat use.

Management Implications: Why we are doing it

The Fortymile caribou herd has been in recovery for over a decade. Over the last 2 years, the herd has expanded its range back into Yukon. Alaska Department of Fish and Game believes the herd is reaching carrying capacity on its summer range. Data from GPS collars is needed to inform range assessment, including predicting habitat use and quality. This information will be used to help make land use management decisions and in upcoming environmental assessments, including the Kaminak Mine environmental assessment. It will also help support harvest management decisions, i.e., where to open or close game management subzones to hunting.

Project Activities: How we will get it done

We will use telemetry flights in association with GPS collar locations to locate the herd in fall and early winter to determine where Yukon range expansion is occurring, to support ADFG range sustainability interests, and in harvest management during openings and closures in both jurisdictions. Alaska Department of Fish and Game will continue to use GPS collars as a basis for monitoring the nutritional status of satellite collared caribou and their young. We will also collaborate with a post-doctoral student, partners in Alaska, and private partners to estimate relative habitat quality and quantity across the herd's range and to identify movement corridors likely to be used by the herd.

Glenlyon and Woodcutters Ranges Sheep Survey

Mark O'Donoghue, Northern Tutchone Regional Biologist

Project Description: What we are going to do

We are going to use a helicopter to survey sheep in the Glenlyon Range covering suitable habitat, and areas identified from previous surveys and local knowledge. When groups of sheep are encountered, we will count and classify all animals by age and sex, and record their locations.

Management Implications: Why we are doing it

This survey will provide us with information to appropriately manage harvest of sheep in the Glenlyon Range. In recent years, harvest of sheep in this area has included a comparatively large percentage of very young sheep (5-7 years old). Older sheep (11-15 years old) used to be harvested regularly in this area, but since 2000, only 2 sheep over 10 years old have been shot.

We do not have recent census data for sheep in this area. The Glenlyon sheep population was surveyed in 1976 (236 sheep), 1986 (151), 1993 (97) and 2002 (113), suggesting a declining trend. Our sheep management guidelines call for the maintenance of older, large rams in sheep populations. There may be a need for harvest regulations in these areas but we first require current population estimates to examine the health of this sheep population.

Project Activities: How we will get it done

This survey will take two days and will be completed in July when sheep are on their post-lambing range. We will use a helicopter to survey sheep in the Glenlyon and Woodcutter ranges, covering all suitable habitat, and areas identified from previous surveys and local knowledge. When groups of sheep are encountered, we will count and classify all animals by age and sex, and record their locations. Given the difficulty in surveying Fannin sheep that regularly use forested habitat, we will compare the results of this survey with a similar survey conducted in late winter 2015.

We will finalize reports for the survey by December 2015. We will also present the survey results verbally at meetings of the Carmacks and Selkirk Renewable Resources Councils and at the Selkirk May Gathering.

Klaza Caribou Herd Population and Habitat Ecology

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

This project will provide baseline information regarding the population and habitat ecology of the Klaza caribou herd prior to more advanced development within its range. During this fiscal year, we will use a number of monitoring activities to assess population status, adult female mortality, and movements and distribution of the herd.

Management Implications: Why we are doing it

Northern Mountain caribou are listed as "Special Concern" under the federal Species At Risk Act and the health of these herds is a high priority for management partners in Yukon. There are a number of development interests within the Klaza caribou herd's range and there is little information to help inform environmental assessment reviews, including those for the Casino and Kaminak mine projects. Evaluating the impact of industrial activities on the Klaza herd is a high priority for our partners, including Little Salmon/Carmacks First Nation, Carmacks Renewable Resource Council, and Selkirk First Nation.

An additional objective of the project is to refine our understanding of the distribution of the Klaza herd and its range delineation, particularly with respect to the Aishihik herd to the south.

Project Activities: How we will get it done

This is the fourth year of a proposed multi-year project. For this year, we will continue collection of GPS radio-collar locations from collared caribou; complete a fall composition survey that yields adult sex ratios and calf recruitment ratios; and retrieve GPS radio-collars emitting a "mortality" signal, which helps us assess female mortality. Ten radio-collars were deployed in November 2014. These collars will remain active for three years. This project will be completed once these collars have finished collecting data.

Kluane Caribou Distribution and Population Status

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

We will determine the seasonal distribution and population status of the Kluane caribou herd. Information from this project will also be used to identify critical areas and movement corridors.

Management Implications: Why we are doing it

Northern Mountain caribou are listed as "Special Concern" under the federal Species At Risk Act and the health of these herds is a high priority of management partners in Yukon. The Kluane caribou herd is one of the smallest herds in Yukon and requires a higher degree of monitoring under the National Northern Mountain Caribou Management Plan because of its increased vulnerability. Mineral exploration in the herd's spring and summer range is increasing and there is concern that the current information on the herd's distribution is outdated—the most recent telemetry data for the herd is 10 years old—and may not adequately or accurately inform the environmental assessment process. Understanding movement corridors is also important as the herd crosses the Alaska Highway as it moves from winter to summer ranges.

Project Activities: How we will get it done

This is the third year of a proposed five-year project. The first two years consisted of animal capture and collaring. We completed a population estimate in 2015. Over the next 3 years, we will continue tracking location data from the collars. These collars are programmed to drop-off during the summer of 2017. We will conduct a composition survey in October 2015 to assess calf recruitment and adult sex ratio. This will help us establish the population status.

Kluane/Duke River and Koidern Moose Recruitment

Shawn Taylor, Kluane Regional Biologist

Project Description: What we are going to do

We will conduct an early winter recruitment/low-intensity moose survey in the Kluane/Duke River and Koidern Moose Management Units (MMUs). We will integrate the methods from this pilot study with the methods developed for model-based censuses into a user-friendly program that is readily accessible by other Fish and Wildlife Branch staff.

This project is tentative, subject to priorities and available resources.

Management Implications: Why we are doing it

There is pressure from First Nations and residents to monitor moose populations more frequently so that responses to changing conditions (e.g., population trends, access, harvest patterns, etc.) can be made more rapidly. Many local people, including the Dan Keyi Renewable Resource Council and the Kluane First Nation, have raised concerns about a perceived decline in the local moose population near Burwash Landing since the 1990's. The current estimated total harvest rate in the Kluane/Duke River MMU may be at or exceeding the sustainable harvest level, however, updated population information is needed to assess this.

Traditional census approaches do not allow for prior census information to guide the design of subsequent surveys in the same area. In addition, there are presently no established methods to conduct unbiased recruitment surveys.

We will use results from the pilot model-based census we conducted in 2014 to guide the design of a low-intensity census/recruitment survey in 2015. We will then incorporate survey results into population models specific to each area. Once finalized and field-tested, this new approach will allow us to monitor moose populations and harvest rates more frequently.

Project Activities: How we will get it done

We will conduct the survey in November 2015, counting and classifying moose into adult cows, adult bulls, yearlings and calves in selected 4km x 4km survey cells using crews of three observers in helicopters. The majority of statistical methodology development and modeling required for this project was completed before in 2014. We will follow a similar methodology for this second year.

Paint Mountain, Jarvis and Cultus Moose Recruitment

Shawn Taylor, Kluane Regional Biologist

Project Description: What we are going to do

In 2013, we conducted an early winter census of moose in the Paint Mountain, Jarvis, and Cultus Moose Management Units (MMUs). The 2013 census was conducted as a pilot model-based approach and provided us the opportunity to develop and test a low-intensity census/recruitment survey in November 2014. This year, we will conduct a second winter recruitment/low-intensity moose survey in these three MMUs. This project will build on the 2014 recruitment survey and provide an estimate of the natural variation in recruitment for this area.

Management Implications: Why we are doing it

There is pressure from First Nations and residents to monitor moose populations more frequently so that responses to changing conditions (e.g., population trends, access, harvest patterns, etc.) can be made more rapidly. Moose monitoring in this area has been identified as a high priority by the Champagne and Aishihik First Nations. Preliminary results from the 2013 census of the Paint Mountain, Jarvis, and Cultus MMUs suggest low recruitment in the past two years and a declining bull to cow ratio. These results, combined with high harvest rates and the expansion of quad-access in the area, suggest that the moose population in this area is currently harvested at or above sustainable levels.

Traditional census approaches do not allow for prior census information to guide the design of subsequent surveys in the same area. Once finalized and field-tested, this new approach will allow us to monitor moose populations more frequently, meaning a more frequent assessment of population status and harvest rates.

Project Activities: How we will get it done

We will conduct this survey in November 2015, counting and classifying moose into adult cows, adult bulls, yearlings and calves in selected 4km x 4km survey cells using crews of three observers in helicopters. The majority of statistical methodology development and modeling required for this project was completed before the 2014 recruitment survey. We will follow a similar methodology for this second year, but may include changes to improve the accuracy of estimates.

Porcupine Caribou Harvest Program

Mike Suitor, North Yukon Regional Biologist

Project Description: What we are going to do

We will operate a check station on the southern portion of the Dempster Highway to document harvest and to provide an opportunity to distribute educational materials to hunters.

Management Implications: Why we are doing it

In the Harvest Management Plan for the Porcupine Caribou Herd in Canada, all parties committed to collecting rigorous and verifiable harvest data from their respective hunters on an annual basis. Data collected by this program, when combined with knowledge of caribou abundance and age/sex ratio data collected by the Porcupine Caribou Herd Population Monitoring Project, will be evaluated at the Annual Harvest Meeting to determine if harvest is negatively affecting the herd. Pending results, specific actions may be taken as outlined in the Harvest Management Plan and the associated Implementation Plan.

A large component of Porcupine caribou herd management is public education and stewardship. Providing educational materials at the check station will support this initiative through hunter education.

Project Activities: How we will get it done

If the herd's migration enables harvesters to access it from the Dempster Highway, we will operate a check station at the Dempster/Klondike Highway for 2.5 months (October – December) to record harvest and provide an easy point of contact with active hunters. The number of caribou harvested, along with harvest data from co-management partners will be collected and summarized. If the check station does not open, we will redirect funding from this project towards the Porcupine Caribou Herd Monitoring project.

Porcupine Caribou Herd Monitoring

Mike Suitor, North Yukon Regional Biologist

Project Description: What we are going to do

This project focuses on estimating herd size, composition, and health of animals in the Porcupine caribou herd, along with assessing the health of the herd as a country food for residents. These measures relate directly to harvest management of the herd.

Management Implications: Why we are doing it

Ensuring that harvest of the Porcupine caribou herd is sustainable requires an understanding of the population status of the herd. Monitoring of this international herd is collaborative with costs are shared amongst Canadian and Alaskan partners. Results from monitoring activities undertaken during this project will be used at the Porcupine Caribou Management Board's Annual Harvest Meeting to make harvest management decisions, as per the Porcupine Caribou Harvest Management Plan and its associated Implementation Plan.

Monitoring of health indices and metal loads allows wildlife managers to provide recommendations on human consumption of the herd. For example, previous health monitoring has resulted in the current advisory on consumption of kidneys and livers.

Project Activities: How we will get it done

During the fall and winter, if Porcupine caribou are accessible for community harvesting, we will work with hunters to obtain samples and information from harvested caribou to inform body condition monitoring and tracking. In the late winter (February to March), we will capture and deploy approximately 16 – 25 satellite and 15 – 25 VHF collars on the herd. Blood samples will be taken from captured caribou and will be tested as part of ongoing monitoring of disease prevalence. If feasible, we will conduct a composition count to provide information on over-wintering survival and recruitment of young of the previous year into the population. Calf recruitment is a population indicator that helps establish herd status.

Porcupine – Hart Caribou Overlap Monitoring

Mike Suitor, North Yukon Regional Biologist

Project Description: What we are going to do

This project provides location information for the Hart River caribou herd. This information supports effective harvest regulation that ensures the much smaller Hart River herd is not over-harvested, while not limiting the ability of licensed harvesters to hunt Porcupine caribou in the five subzones where the two herds' ranges overlap.

Management Implications: Why we are doing it

Hart River caribou are one of the 26 herds of Northern Mountain caribou found in Yukon. Northern Mountain caribou are listed as "Special Concern" under the federal Species At Risk Act and the health of these herds is a high priority for management partners in Yukon. Porcupine caribou, which are Grant's caribou, frequently migrate in the fall and early winter into selected game management subzones along the Dempster highway. These subzones overlap with the range of the much smaller Hart River caribou herd (i.e., ~2,200 animals compared to ~197,000 in the Porcupine herd). The season for hunting Porcupine caribou is August 1 to January 31 whereas the season for Hart River caribou is August 1 to October 31. In years when Porcupine caribou fail to migrate into these areas and Hart River caribou are present, closures are required on October 31 to ensure Hart River caribou harvest does not exceed sustainable limits.

Project Activities: How we will get it done

We will locate radio-collared Hart River and Porcupine caribou from fixed-wing aircraft three times: one survey will identify Hart River caribou herd distribution in late September during a population count of the herd; a second flight in late October will focus on the overlap area with Porcupine caribou; and a third flight in March will again cover the extent of the Hart River herd range. The Alaska Department of Fish and Game will also be monitoring Porcupine caribou herd movements using satellite collar locations and aerial telemetry.

Sheep Survey—GMS 8-12 to GMS 8-15

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

We are conducting two sheep surveys in Game Management Subzones (GMSs) 8-12 to 8-15 directly east of Whitehorse to estimate the minimum population size and population composition. One survey was already conducted in late-winter 2015; the second survey will be conducted in summer 2015. Two surveys are required as these sheep are frequently found in more forested areas, which make them harder to see and reduces confidence in survey estimates. Conducting an additional survey in early winter, when sightability is expected to be better, should help improve confidence in survey results.

Management Implications: Why we are doing it

Previous surveys in this area suggest sheep numbers in GMS 8-12 to 8-15 are low and there is concern that harvest may be exceeding sustainable levels.

Licensed sheep harvest in these GMSs has increased rapidly in the past 4 years and is now similar to harvest levels from the early-1990s—a period when non-resident outfitter guided harvest was occurring in the area. The recent increase in resident harvest may be a result of increasing access into these areas. If so, it would indicate continued, and potentially increasing, harvest pressure. Additionally, in 2014, Outfitting Area 17 resumed operation, which resulted in additional access by non-residents hunters.

Project Activities: How we will get it done

We will conduct helicopter-based aerial surveys during summer (early-June to mid-July). All observed sheep will be counted and classified as lambs, rams, and nursery sheep (ewes, yearlings, and 2 year old rams that have yet joined ram bands) to obtain the composition of the population. Our survey efforts will be focused on mountainous areas associated with Mt. Byng, Joe Mountain and Cap Mountain.

Sheep Surveys—GMZ 7 and Southern GMZ 5

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

We will conduct a series of sheep surveys to estimate minimum population size and population composition in Game Management Zone (GMZ) 7 and the southern portion of GMZ 5.

Management Implications: Why we are doing it

This information will be used to assess the sustainability of sheep harvest in GMZ 7 and southern GMZ 5. Harvest pressure may be exceeding harvest guidelines in parts of GMZ 7. With resumption of non-resident harvest in Outfitting Area 17 in 2014 and increasing limitations for licensed sheep hunters in GMZ 7 east, harvest pressure in GMZ 7 west and southern GMZ 5 may be increasing. Recent assessments of harvest in a number of game management subzones of GMZ 5 indicate rates are exceeding the current sustainable harvest guideline of 4% of the adult population.

Project Activities: How we will get it done

We will conduct helicopter-based aerial surveys during summer (early-June to mid-July). All sheep observed will be counted and classified as lambs, rams, and nursery sheep (ewes, yearlings, and two year old rams that have yet to join the ram bands) to obtain the composition of the population.

Takhini and Braeburn Elk Herd Assessments

Sophie Czetwertynski, Ungulate Biologist (Moose, Elk, Deer)

Project Description: What we are going to do

We will update our estimates of minimum herd size, composition, and distribution for the Takhini and Braeburn elk herds.

Management Implications: Why we are doing it

The Management Plan for Elk in Yukon was completed in June 2008. The first goal of the plan is to maintain healthy and viable populations of free-ranging elk in Yukon. Actions under this goal include the ongoing monitoring of elk to determine population size, distribution, composition, and survival. Managing for stable herds and a small harvestable surplus is supported by the plan and desirable both for residents as a hunting opportunity and in the case of the Takhini herd, for land holders looking to dissuade elk from their properties.

The current harvest management regime functions under the assumption that current allocation and harvest balances with recruitment to maintain the herds at current levels. The monitoring of distribution, abundance, and population composition is important for ensuring harvest management objectives are being achieved and that measures to mitigate elk-agriculture conflict are successful.

Project Activities: How we will get it done

We will obtain estimates of minimum herd size, recruitment, and distribution via fall ground-based observations and one aerial survey. We will monitor distribution and movement patterns of radio-collared animals regularly via ground-based telemetry.

Tay River Caribou Distribution and Population Status

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

This project involves the deployment of GPS radio-collars on the Tay River caribou herd to update our understanding of the seasonal distribution of the herd and, ultimately, to develop process-based habitat models that will identify important seasonal caribou habitats. We will use these radio-collars to locate animals and animal groups to collect demographic information (sex ratio, recruitment ratios) and as marks during a proposed mark-resight population estimate of the herd. Information from these collars will also allow us to confirm or refute the existence of the Moose Lake herd, a small herd located and overlapping with the Tay River herd at its northern boundary.

Management Implications: Why we are doing it

Tay River caribou are one of the 26 herds of Northern Mountain caribou found in Yukon. Northern Mountain caribou are listed as "Special Concern" under the federal Species At Risk Act. The health of these herds is a high priority for management partners in Yukon. Forest fires in the past few decades have altered the winter distribution of the Tay River herd since the data were last collected. The population estimate of 3,750 is outdated (obtained in 1993) and may be unreliable. Harvest pressure on the herd may be at sustainable rates and mineral exploration in the herd's range is advancing.

Reliable and meaningful information on the herd's distribution is required to inform environmental assessment processes for activities proposed in the herd's range. Updated information on the status of the herd is needed to ensure harvest is sustainable.

Project Activities: How we will get it done

We will deploy up to 40 GPS radio-collars in late winter 2016. In conjunction with these capture operations, we will conduct a comprehensive fixed-wing reconnaissance of the herd's range to locate animals. Collars will collect data for three years following deployment. A proposed mark-resight population estimate will be completed one year after collaring operations. We will also be able to use collars to locate animal groups during subsequent composition surveys that will be used to estimate adult sex ratios and calf recruitment ratios.

Thinhorn Sheep Genetics

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

This project aims to incorporate genetic information, demographic information, and landscape features to identify biologically meaningful units (i.e., populations) for thinhorn sheep.

Management Implications: Why we are doing it

Sheep management is currently based on game management subzones (GMSs) but it is not clear if this is a biologically meaningful approach. It is important to determine the appropriate unit of management for thinhorn sheep because it will impact decision-making related to harvest management, environmental assessment, and monitoring.

Project Activities: How we will get it done

DNA will be extracted from almost 5,000 horn core shavings from sheep harvested in Yukon. These samples are collected as part of mandatory submission requirements for sheep harvested by licensed hunters.

Horn core samples will be sub-sampled before delivery to the University of Alberta so that Government of Yukon retains some of each sample. Upon delivery to the university, DNA will be extracted from each horn core sample and compared to the single nucleotide polymorphism (SNP) chip developed the previous year, which involves comparing samples at 180 individual base pair sites.

Once SNPs have been assessed, analysis will be completed to identify genetically similar groups. These groups will then be compared with demographic information (where available) and landscape features (e.g., valleys, rivers) that may function as movement barriers to identify biologically meaningful management units.

Thinhorn Sheep Lamb Recruitment Monitoring

Troy Hegel, Ungulate Biologist (Caribou, Sheep, Goat)

Project Description: What we are going to do

This project will estimate lamb recruitment in five thinhorn sheep populations over a broad geographic area in Yukon. Selected sheep populations will be surveyed concurrently with caribou herds during annual fall composition surveys. This project forms the basis for continued annual monitoring of wild sheep in Yukon, and will be similar to monitoring carried out for Northern Mountain caribou.

Management Implications: Why we are doing it

Research to date shows that sheep populations change in response to environmental factors such as weather. Measuring these changes across the territory will allow managers to inform decision making for sustainable harvesting and environmental assessments—particularly if there have been several continuous years of poor recruitment, which may suggest a sheep population may be more vulnerable to industrial development or high harvest pressure.

Project Activities: How we will get it done

During fall caribou composition surveys (late-September to early-October), we will assess lamb recruitment for four sheep populations that overlap with monitored caribou herds: Gray Ridge (Game Management Subzone or GMS 9-03), Ruby Range (GMS 5-36), Ddhaw Ghro (GMS 4-03), and Mt Mye (GMS 4-46) and along the Magundy River. We will also conduct a sheep survey in the Tombstone area (GMS 2-23, 2-28, and 2-41) in July as no annual caribou composition surveys occur in this area. These are helicopter-based surveys and will let us assess lamb:nursery sheep ratios (nursery sheep are ewes, yearlings, and 2 year old rams that have yet to join the ram bands). As rams will not be classified, we are able to keep survey duration and disturbance to a minimum.

Wood Bison Health Monitoring

Thomas Jung, Senior Wildlife Biologist

Project Description: What we are going to do

This project is about selectively removing a small number of adult wood bison each year, subject to funding priorities, for the purpose of collecting samples to test for diseases of concern. From past experience we have determined that relying on hunters to obtain necessary samples for disease testing is not sufficient, and that a dedicated sampling effort is needed to provide for rigorous testing.

Management Implications: Why we are doing it

Nationally, wood bison are a species at risk; however, in Yukon, populations are growing. This project will provide an assessment of the disease status of bison in Yukon and will fulfill a key task in the Yukon Wood Bison Management Plan and the draft National Wood Bison Recovery Strategy.

Project Activities: How we will get it done

We will collect and necropsy 6 to 8 wood bison carcasses to collect appropriate biological samples. This field work will occur in early April 2015, soon after the end of the hunting season, and will be dependent on the population size being able to support the additional loss of these animals.

We are undertaking this project as a pilot project for this year, with a vision of a longer term project that could span 4 to 5 additional years.

Wood Bison Population Monitoring

Thomas Jung, Senior Wildlife Biologist

Project Description: What we are going to do

Bison population monitoring activities are identified in the Yukon Wood Bison Management Plan and the draft National Recovery Strategy for Wood Bison in Canada. This year, our monitoring will focus on:

- Collecting data on the composition, reproduction, and survival of animals in the population.
- Continuing to monitor movements, distribution and range expansion of bison to provide data to regional planning processes.
- Investigating the impact of bison on muskrats in the area.

Management Implications: Why we are doing it

Nationally, wood bison are a species at risk; however, in Yukon, populations are growing. Through the current management plan we, and our bison management partners, are tasked to check herd growth, and, if required, to reduce the size of the herd to at or near 1000 animals post hunt. Because of the high harvest rate, small population size, and conservation status of the herd, we require good information about bison to balance recovery and reduction, address community concerns, and allow local people to benefit from the resource.

Project Activities: How we will get it done

In July 2015, we will conduct a composition count of bison, with an effort to count calves and determine the sex-ratio of the population.

We will also deploy satellite radio-collars on cow and bull bison in the population via live captures in April 2015 or October 2015. We will use collared animals to monitor survival, range expansion, shifts in range use, and habitat use. We will relocate collared bison through bi-monthly radio-telemetry fixed-wing flights. Maps of collared bison will be distributed on a weekly basis, for use by hunters.

In late April 2015 we will conduct an aerial survey of muskrat push-ups in relation to disturbance by bison to provide information on the potential impact that bison may be having on muskrats in the region.